

## Description

Ips is a common group of bark beetles that infests pine and spruce trees. Eleven species of Ips beetles occur in Colorado and produce two to four generations per year. Factors that contribute to outbreaks include prolonged drought stress and the exposure of freshly cut trees.

## General Life Cycle

1. The male beetle initiates attacks by boring through the outer bark. Once inside, a nuptial chamber is created, and females are attracted by the male's pheromones.
2. After mating, females excavate egg galleries off the central chamber. The tunnels produced by the adults appear as Y- or H-shaped patterns.
3. Eggs are laid in the galleries. The larvae soon hatch and tunnel outward, etching the sapwood.
4. The larvae begin as small grubs and grow to about ¼-inch long before maturing into beetles.
5. Small, round exit holes in the bark of infested trees indicate the beetles have completed development and flown away.
6. Flying beetles actively seek new trees April through October.

## Damage

When the larvae tunnel, affected parts of the tree discolor and die. These symptoms may be limited to a single branch or the top of the tree. Over time, the host pine or spruce may be continually attacked, killing the entire tree.

## Management

### Prevention of attacks

1. Supplemental watering and thinning are among the best prevention practices a homeowner can use.
2. Freshly cut material from pruning or thinning should be treated or removed from the vicinity of valuable trees. Never stack green, infested pine or spruce wood next to living trees. This material should be chipped, dried out, or treated.
3. Insecticides can be used as preventive sprays. They must be applied prior to adult beetle infestation. Use the manufacturer's recommended applications to provide protection. Two treatments per year may be needed.

### Control of beetles after infestation

Several treatments exist for infested beetle trees. These treatments include bark removal, wood chipping, solar treatments, or the physical removal of infested material at least one mile from susceptible trees.



A pinyon pine "fader" killed by Ips beetles.



Boring dust in bark crevices indicating recent attack by Ips beetles.



Tunneling by Ips hunteri in blue spruce.



A Colorado landscape dominated by Ips-killed pinyon pines.



Ips pini egg galleries under bark of ponderosa pine trunk.



Ips confusus pitch tubes on infested pinyon pine trunk.



Top dieback of spruce from drought stress and Ips attack.



Infested trees need to be cut and treated prior to beetle emergence.



Storing cut firewood near susceptible trees greatly increases the risk of Ips beetle attack.



For more information about the management of mountain pine beetle, contact your nearest office of the Colorado State Forest Service or USDA Forest Service.

